ENVIRONMENTAL ASSESSMENT
FOR RECLAMATION'S CONSENT TO WATER SALE AND TRANSFERS UNDER THE SACRAMENTO RIVER SETTLEMENT CONTRACTORS 2003 IRRIGATION SEASON WATER TRANSFER PROGRAM

1. PURPOSE AND NEED

a. Introduction

The Bureau of Reclamation (Reclamation) has received requests from eight Federal Sacramento River Settlement Contractors (Contractors) for the sale and transfer of water to lands located outside the boundaries of the Contractors' respective service areas. Potential purchasers of this water include: the Metropolitan Water District of Southern California (MWD), the California Department of Water Resources (DWR) for its Dry Year Program, the CALFED Bay-Delta Program's Environmental Water Account (EWA), other Central Valley Project (CVP) or State Water Project (SWP) contractors. The water that will be transferred is part of the eight Contractors' base supply identified in their respective Sacramento River settlement contracts with Reclamation. Reclamation's consent to such transfers is required by Article 3 of the Sacramento River settlement contracts.

The water contractors initiating this proposal have individually completed California Environmental Quality Act compliance documents for their proposed actions. These are appended to this EA and are incorporated by reference.

b. Purpose and Need Statement

The purpose of the federal action is to approve water transfers under Article 3 of the Sacramento River settlement contracts. The need for the proposed water sales and transfers is to offset a possible shortfall of water in 2003 (that would have otherwise been available to MWD) due to the decision of the Secretary of the Interior to reduce MWD's supply of California's diversions from the Colorado River beginning on January 1, 2003, or that may occur as a result of hydrologic conditions.

In the event that MWD does not exercise its option to obtain water under the agreements with the contractors, the water may be made available for sale to the DWR's Dry Year Program which provides water to make up losses of normal supplies due to hydrologic shortages, or to the EWA which provides water allowing for strategic cuts in pumping at the export pumps in the Delta or to other CVP or SWP contractors. The proposed water sales and transfers reflects contingency planning by a number of federal, state, and local agencies, as well as private water companies, to minimize the adverse effects of potential reduced supplies during 2003.

2. ALTERNATIVES

Reclamation proposes to approve requests from eight Sacramento River settlement contractors for the transfer of a portion of the base supply under their respective contracts. These water sales and transfers are not a Reclamation initiated action but rather Reclamation is providing consent for an action being undertaken by these eight CVP contractors.

a. Provide Consent Alternative (Reclamation's Proposed Action)

Reclamation's action would approve one-year transfers of up to110, 000 acre-feet of transferred water from the eight Sacramento River settlement contractors. Associated with each transfer is the potential use of Warren Act contracts between Reclamation and MWD that will allow storage of up to 10,000 acre-feet per contractor of the transferred water in Shasta Reservoir during the 2003 irrigation season for later releases.

b. No Action Alternative

Reclamation would not provide consent for the Contractors' proposed water sales and transfers. USBR would not enter into Warren Act contracts with MWD.

c. Other Alternatives Considered But Not Carried Forward

Reclamation did not consider any alternatives to the Proposed Action because the decision before Reclamation is whether to consent to the requests. It is possible that less then the identified amounts of water would be transferred, however the analysis addressing the identified amounts would encompass the effects of any lesser amount of transferred water.

3. DESCRIPTION OF THE PROPOSED ACTION

The entire project consists of two components. The first component is Reclamation's concurrence with the transfer and execution of Warren Act contracts for temporary storage. The second is the contractor's transfer of the water and subsequent delivery to, and use by other entities.

a. Sale and Transfer of Water

Glenn-Colusa Irrigation District (GCID) and Meridian Farms Mutual Water Company, Natomas Central Mutual Water Company, Pelger Mutual Water Company, Pleasant Grove-Verona Mutual Water Company, Reclamation District 108, River Garden Farms, and Sutter Mutual Water Company (Water Purveyors) (collectively, as noted above, GCID and the Water Purveyors are referred to as the Contractors) propose to sell and transfer a short-term supply of water to MWD. MWD proposes to buy and receive from the Contractors water made available by Contractors during the 2003 irrigation season. GCID would provide its surplus water in accordance with a crop idling program

undertaken by GCID in cooperation with its participating landowners. The Water Purveyors would make water available for transfer pursuant to a crop idling and crop shifting program as well as through groundwater substitution undertaken by the Water Purveyors in cooperation with their participating landowners.

In the event that MWD does not exercise its option to obtain water under the agreements with the Contractors, or a portion thereof, water would be available for sale to DWR for its Dry Year Program which provides water to make up losses of normal supplies due to hydrologic shortages or to the EWA program, or to other SWP or CVP water users.

In order to provide greater flexibility for the delivery and conveyance of the water transferred from the Contractors, MWD intends to enter into Warren Act contracts with Reclamation for the storage of the transferred water in Shasta Reservoir during the 2003 irrigation season to allow for later release. GCID's proposed crop idling program, and the Water Purveyors' proposed crop idling and crop shifting program and groundwater substitution program, together with short-term water transfer purchase and sale agreements with MWD, and Warren Act contracts with Reclamation would be performed and implemented for the 2003 irrigation season only.

Under the proposed GCID Project, landowners who voluntarily decide to participate in the program would execute agreements with GCID wherein they would agree to idle crop acreage for the 2003 irrigation season, thereby forgoing service for some or all of that quantity of water that GCID would otherwise provide to those landowners during the 2003 irrigation season. Similar contracts would be entered into between the Water Purveyors and their respective landowners under the proposed Water Purveyors' Project for the idling of crop acreage and the shifting of irrigated lands to crops requiring lower evapotranspiration of applied water (ETAW)[1]. The Water Purveyors would also enter into agreements with their respective landowners to make water available through groundwater substitution.

b. Quantities of Water to Be Transferred

GCID would make up to 60,000 acre-feet of water available for sale as a result of the crop idling program. The source of the water would be GCID's base supply under GCID's Sacramento River settlement contract with Reclamation (Contract No. 14-06-200-855A). Base supply available to GCID under the terms of the contract is pursuant its claim of pre-1914 appropriative water rights on the Sacramento River. The Water Purveyors would make up to 50,000 acre-feet of water available for sale as a result of crop idling and crop shifting and groundwater substitution programs. The sources of this water would be the Water Purveyors' base supply under their respective Sacramento

[1] ETAW, or Evapotranspiration of Applied Water, is defined as the portion of the total evapotranspiration that is provided by applied irrigation water and is generally considered a conservative estimate of the water conserved as a result of the change in cropping pattern (i.e., the actual quantity of water conserved is greater than indicated by ETAW). ETAW values used for water transfer calculations are based upon crop water demands reflecting average rainfall and evaporative demand.

River settlement contracts with Reclamation. Base supply available to the Water Purveyors under the terms of their contracts is pursuant to post-1914 appropriative water rights for diversions from the Sacramento River. The transfers of water by the Purveyors under post-1914 water rights is subject to the Purveyors first receiving approval from the SWRCB to change the place of use, purpose of use, and point of diversion to effectuate this transfer of water. The Contractors anticipate that rice acreage would comprise most of the crop acreage that would either be idled or shifted. GCID and the Purveyors would not allow more than 20% of any particular type of crop acreage within the District to be idled as part of the proposed Project.

Under the existing conditions, a small percentage of lands within the Contractors' service areas are rotated and temporarily removed from farm production for improvements such as land leveling, weed abatement, etc., in a typical year. When land is rotated, in almost all occasions, some water is applied to check the leveling actions, and also to aid in weed eradication. Idled land for purposes of developing water for this transfer would be greater than this typical amount of land not under production due to operational requirements.

The proposed GCID Project would idle up to 20% of the total amount of acreage within GCID that was served with surface water deliveries during the 2002 irrigation season. In this regard, 100,378 acres of rice were planted within GCID, and served with surface water deliveries from GCID, during the 2002 irrigation season. The ETAW for rice culture is 3.3 acre-feet per acre, which is consistent with the recent ETAW rates used for water transfers in the Sacramento Valley based on crop idling of rice acreage (*California Water Plan Update. Bulletin 160-98*. November 1998.). Thus, if up to 20% of GCID's 2002 rice acreage were idled (100,378 X .20 = 20,075), the water available for transfer for this projected acreage would be up to 66,247 acre-feet of water (20,075 acres x 3.3 acre/ft.).

The Water Purveyors, in addition to crop idling, plan to make water available for transfer through crop shifting and groundwater substitution. Based on the information provided in Table 2.1, the Water Purveyors estimate that up to approximately 67,000 acre-feet of water could be available through crop idling/shifting and approximately 13,000 additional acre-feet of water could be made available through groundwater substitution. The Water Purveyors propose to transfer up to 50,000 acre-feet to MWD under this proposed action.

TABLE 2.1

Water Purveyors' Potential 2003 Transfer Quantities[1]

Contractor	Total 2002 ETAW (acre-feet)	20% Idling Limitation (acre-feet)	Estimated Groundwater Substitution (acre-feet)	Total (rounded to nearest 100 af)
Meridian Farms	19,079	3,816	0	3,800
Natomas	66,226	13,245	0	13,200
Pelger	6,569	1,314	3,000	4,300
Pleasant Grove-Verona	19,213	3,843	4,935	8,800
RD 108	115,512	23,102	5,000	28,100
River Garden	11,744	2,349	0	2,300
Sutter Mutual	97,426	19,485	0	19,500
Total	335,769	67,154	12,935	80,100

[1] The proposed action addresses only 50,000 acre-feet of the total that may be available.

c. Project Location

The regions in which the water is generated for transfer define the GCID and the Water Purveyors' Project areas. The GCID Project area is within the GCID boundaries, and situated within Glenn and Colusa Counties. The Water Purveyors' Project area is within the Water Purveyors' collective boundaries situated within Colusa, Sacramento, Sutter, and Yolo counties. The precise location of the idled and crop shifted lands within the project areas would be dependent upon the actual landowners who voluntarily choose to participate in the crop idling or shifting programs for 2003. The Contractors would make reasonable efforts to disperse the idled lands to minimize any localized effects of idled lands, and minimize the necessity to add water to transmission canals to maintain wildlife habitat, consistent with Contractors' legal obligations to make the opportunities associated with the proposed transfer available to all landowners on an equal basis. Because participation in the crop idling program must be offered to all eligible growers in the Contractors' service areas, it is anticipated that a wide dispersal of acreage would be enrolled in the program.

d. Water Availability and Transfer

No new construction or improvements to facilities owned or operated by Contractors or recipients would be necessary for the production and transfer of this water. Water that would not be diverted for use on lands within Contractors' service areas would be available for transfer to recipients. The point of delivery for the transferred water made available by GCID would be at the intake of GCID's Hamilton City pumping plant on the

Sacramento River as identified in their Sacramento River settlement contract. GCID's transferred water would be delivered on the basis of what the ETAW would have been for the croplands idled. That is, only the water that would have been consumed in the process of crop use, in this case primarily rice culture, would be available for transfer. The ETAW for rice culture in the Sacramento Valley is calculated at 3.3 acre-feet per acre per growing season (*California Water Plan Update. Bulletin 160-98*. November 1998.). Accordingly, for every acre of rice production idled, 3.3 acre-feet of water would be made available for transfer across the growing season. Likewise, the Water Purveyors' points of delivery would be at a variety of different locations on the Sacramento River as identified in their respective Sacramento River settlement contracts. The Water Purveyors' transferred water would be delivered on the basis of what the ETAW would have been for the croplands idled, the ETAW difference for shifted crops, and the amount of substituted groundwater. The ETAW values that have been assigned to various croplands that may be idled or shifted under the proposed Project are identified below in Table 2.2.

TABLE 2.2

Estimated ETAW Values for Various Crops

Crop	ETAW[2]	Crop	ETAW
Alfalfa	3.0[3]	Pumpkin	1.1
Almond	3.0[3]	Rice	3.3[4]
Bean	1.5[4]	Safflower	.7
Carrots	1.1	Silage	1.8
Corn	1.8[4]	Sudan Grass	3.0
Cotton	2.8	Sunflower	1.4[5]
Melon	1.1[4]	Tomato	1.8[5]
Milo	1.65	Vine Seed	1.1[4]
Oats	.5	Wheat	.5
Onion	1.1	Walnut	3.0[3]
Pasture	3.3[3]	Wild Rice	2.0

[2] ETAW based on information from DWR and information contained in the Sacramento River Basin-Wide Water Management Plan, September 2000, unless otherwise noted.

[3] Crops not acceptable for idling in 2003 Irrigation Season Crop Idling Program.

[4] From DWR Dry Year Water Purchase Program.

[5] Tomatoes and Sunflower have a range of ETAW. It was agreed with MWD to use the lower end of this range for the 2003 transfer.

The typical growing season for rice culture is April through October, although surface water is generally applied only from May through September. The potential ETAW demand across these months is shown in Table 2.3 with the corresponding water production expectations assuming that enough acreage would be idled or shifted to produce the proposed water transfer under the GCID Project and Water Purveyors' Project.[6]

TABLE 2.3

Water Availability Schedule

	May	June	July	August	September	
ETAW in Percent	15	22	24	24	15	
GCID's Water Production In Acre-Feet	9,000	13,200	14,400	14,400	9,000	
Water Purveyors' Water Production in Acre-Feet	7,500	11,000	12,000	12,000	7,500	
Total GCID Production For Transfer in 2003 in Acre-Feet						60,000
Total Water Purveyor Production For Transfer in 2003 in Acre-Feet						50,000

Water would be deemed transferred by the Contractors to MWD at the respective points of delivery in accordance with the preceding schedule during those periods when the Delta is in balanced conditions. MWD would make arrangements with DWR for MWD's conveyance of the transferred water through the Sacramento-San Joaquin Delta, pumping the water into the California Aqueduct, and the ultimate delivery of the water to MWD's service area. Transfer of the water would occur within the regulatory parameters for the SWP, including all applicable Biological Opinions that govern SWP pumping at the DWR's Banks Pumping Plant located in the Sacramento-San Joaquin Delta. As such, water may not be able to be transferred in May and possibly June due to environmental

[6] This ETAW schedule is based on consumptive use of water by rice. Because the Water Purveyors are not only idling and shifting rice, but other crops as well, this schedule only approximates the ETAW schedule of water being made available. However, all parties to the proposed transfer, as well as relevant regulatory agencies, believe the use of the ETAW schedule for rice is sufficiently accurate to use for purposes of this transfer.

restrictions on SWP pumping during these periods. To provide for an alternative delivery schedule in the event of these pumping restrictions, MWD would enter into Warren Act contracts for the use of CVP storage, if needed, for later release of up to 10,000 acre-feet of the transfer water for each of the eight federal contractors during the 2003 irrigation season when SWP pumping capacity is available. The transfer of water and/or accrual to storage for release would only occur when the Delta is in balance, there is no available capacity to pump transferred water at the SWP pumping plant, excess capacity is available in Shasta Reservoir and Reclamation determines there are no other conditions exist that would cause the storage of the transfer water to have an adverse effect on other CVP operations.

e. Use of Water by Metropolitan, DWR Dry Year Program, EWA, or CVP Contractors

Under the draft option and short-term water transfer agreements between the Contractors and MWD, February 15, 2003, is the deadline for MWD to exercise some of its options to request delivery of the water from the Contractors. If the water were called, MWD would take delivery of this water in a manner physically identical to its typical SWP deliveries. This water would be used to offset a shortfall of water in 2003 that would have otherwise been delivered to MWD from the Colorado River for use in MWD's service area. Accordingly, any water transferred under the proposed Project would not represent an overall increase in supply or a change in MWD's operations. As such, no adverse Project-specific impacts to MWD's service area due to the proposed transfer would occur.

If MWD does not elect to take the water, DWR may be assigned MWD's rights and agree to purchase the water from one or more Contractors under similar terms. This water would then be used to offset a water shortage during 2003 within the Place of Use of the State Water Project system. As such, the water would only be used to offset a temporary shortage and does not represent an increase in water normally delivered to SWP customers. Therefore, no adverse impacts would occur. DWR may also elect to purchase any portion of this water for the EWA, which would allow DWR to have an alternate supply available for export users, enabling strategic cuts to be made in pumping at the SWP Banks Pumping Plant and the Central Valley Project's Tracy pumping plant.

In the alternative that MWD does not exercise its option to take the transfer water from one or more of the contractors, the contractors could transfer the water to CVP contractors for their use. As with transfers to MWD, SWP contractors or the EWA, any such transfer would be used to offset a temporary shortage of water during 2003. For this reason, there would be no adverse impacts from such actions.

4. ENVIRONMENTAL CONSEQUENCES

a. Hydrology and Water Quality

No Action Alternative

No changes to existing water resources would occur under the no action alternative.

Reclamation's Proposed Action Alternative

The Contractor's proposed project would not involve any discharges and thus would not have an adverse impact upon water quality or result in degradation of water quality. Minor improvements in water quality in water courses tributary to the Delta may be expected due to the increase in flows. No adverse water quality impacts in the Delta are expected as all water quality related pumping restrictions at the export pumps would be maintained during diversion of the water into the California Aqueduct. As rice lands are generally underlain by impermeable clays (a necessary condition to rice culture), little percolation of water would normally occur and thus insignificant amounts of groundwater recharge would be affected by crop idling. Additionally, since only the ETAW value of water applied to rice fields would be transferred, the remainder of the applied water would remain in the system for other users.

The Contractor's proposed project would not alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river. Minor reductions in drainage from idled fields would result, but these would not increase erosion, siltation on- or off-site, or the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. The water transferred would be maintained within the Sacramento River and the existing CVP and/or SWP conveyance and storage systems. In addition, there are no ground-disturbing activities associated with the Contractor's proposed project.

The Contractor's proposed project would not create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems. Hence, no impacts relating to storm water drainage systems would occur with project implementation.

The Contractor's proposed project would not expose people or property to water-related hazards such as flooding or impede or redirect flood flows the Contractor's proposed project would not involve constructing any housing. All facilities which would be utilized are existing facilities designed according to standard engineering design practices to limit the potential for exposure of people or property to water-related hazards, such as flooding. Therefore, no impact relating to flooding would occur with the Contractor's proposed project.

The execution of Warren Act contracts to store up to 80,000 acre-feet of water in Shasta Reservoir will not significantly affect hydrology/water quality. Compared to the capacity of the Shasta Reservoir (about 4.5 million acre-feet) and related water management activities, this is, for practical purposes, a very minor amount of water. Any effect of storing this water would be discountable. In addition the use of project facilities via a

Warren Act contract cannot adversely affect any project purposes (including water supply, flood control, and environmental requirements).

b. Biological Resources/Endangered Species

No Action Alternative

No changes in existing agricultural patterns or modifications in the amount or timing of water deliveries, which could affect biological resources or endangered species, would occur under the no action alternative.

Proposed Action Alternative

Several special-status wildlife species have the potential to occur within the project areas: the giant garter snake (listed as state and federally threatened), the northwestern pond turtle (listed as a state species of special concern and federal species of concern), the Sacramento River winter-run Chinook salmon (listed as state and federally endangered), Central Valley spring-run Chinook salmon (listed as federally threatened), the delta smelt (listed as state and federally threatened), the Sacramento splittail (listed as federally threatened), and the Central Valley steelhead (listed as federally threatened).

Giant Garter Snake (*Thamnopsis gigas*)

The giant garter snake may be found in agricultural wetlands such as irrigation and drainage canals. These artificial waterways can potentially be used for purposes such as ease of movement; protection from predators; warmth to aid metabolism, gestation, and digestion and as a food source. (Draft Recovery Plan for the Giant Garter Snake. 1999.) While the irrigation patterns throughout the Purveyor's lands would be modified as a result of the Contractor's proposed project, water levels in irrigation and drainage canals would be maintained within several inches of non-project operations and no complete drying out of such conveyances would occur. As such, water conveyance systems would remain watered and available to the snake and other wildlife that utilize it.

Flooded rice fields in the Sacramento Valley can be used by the giant garter snake for foraging, cover and dispersal purposes. The non-irrigated project fields would have little or no vegetation, retaining the open character that is currently present in fields that are between plantings or that otherwise have relatively little vegetative cover. Because the maximum increase percentage of land idled in this project would be up to 20% above the typical idling patterns, at least 80% of Purveyors' irrigable acreage would remain unaffected. Due to the nature of land ownership and program participation opportunities, lands taken out of production would be largely dispersed, such that the contiguous nature of idled lands would be minimized allowing for a mosaic of lands that could be utilized by the snake throughout the Purveyor's jurisdiction. The changes

to agricultural fields that would occur under the Contractor's proposed project could have minor and temporary direct effects on the giant garter snake habitat through the decrease in potential cover and foraging areas as a result of the reduction in planted rice acreage. The one-year duration of the Contractor's proposed project minimizes any long-term disruption to the giant garter snake habitat.

Because the Contractor's proposed project would not convert any agricultural lands to non-agricultural land uses, the only change would be a temporary, one-year increase in the time between planting of rice crops within a percentage of the farmlands. In addition, at least 80 percent of the Purveyor's fields would remain unaffected by the proposed project. Moreover, each of the transferring districts/companies would include a maximum contiguous block size limitation on the amount of idled lands under the crop idling programs in their service area. These limitations may vary somewhat between the transferring districts/companies, but in general, the maximum block size of contiguous lands being idled would not exceed 160 acres, except under certain limited circumstances, and even in those cases, the maximum contiguous area being idled would not exceed 320 acres. As such, the Contractor's proposed project would have a less-than-significant impact to the giant garter snake within the existing farmlands due to a short-term decrease in potential cover and foraging areas for this species.

Therefore, Reclamation's Proposed Action Alternative (the consent to the sale and transfer of this water) would not cause a direct adverse or cumulative adverse effect on giant garter snake in the study areas.

Northwestern Pond Turtle (*Clemmys marmorata marmorata*)

The northwestern pond turtle inhabits waters with little or no current. The banks of inhabited waters usually have thick vegetation, but basking sites such as logs, rocks, or open banks must also be present. Pond turtles lay their eggs in nests in upland areas, including grasslands, woodlands, and savannas. Pond turtles could potentially be found in and along irrigation and drainage canals. The Contractor's proposed project would not eliminate water from the conveyance canals within each service area. Therefore the Contractor's proposed project would not impact the western pond turtle either directly or indirectly.

Therefore, Reclamation's Proposed Action Alternative (the consent to the sale and transfer of this water) would not cause either a direct adverse or cumulative adverse effect on northwest pond turtle in the study areas.

Chinook Salmon (*Oncorhynchus tshawytscha*), Delta Smelt (*Hypomesus transpacificus*), Steelhead (*Oncorhynchus mykiss*), and Splittail (*Pogonichthys macrolepidotus*)

The Sacramento-San Joaquin Delta is a migration corridor and seasonal rearing habitat for winter-run and spring-run Chinook salmon and steelhead. It provides spawning and

nursery habitat for delta smelt. The proposed water transfer water to MWD would be delivered through the Sacramento-San Joaquin Delta with timing similar to MWD's typical SWP deliveries in conformance with the 1993 Winter-run Chinook Salmon Biological Opinion (NOAA Fisheries), the 1995 Delta Water Quality Control Plan (SWRCB), the 1995 Delta Smelt Biological Opinion (USFWS), and the 2002 Interim Operations of the Central Valley Project and State Water Project (NOAA Fisheries). The proposed transfer would not compromise the environmental regulations that specify minimum flow requirements for winter-run and spring-run Chinook salmon and steelhead. Required releases from Shasta Reservoir for the protection of fisheries would continue to be made. As such, there would be no direct or indirect impact from the Contractor's proposed project on listed fish species in the Sacramento-San Joaquin Delta.

The Contractor's proposed project would result in less-than-significant impacts to special status species because no special-status wildlife would be directly affected by the idling activities and indirect impacts to habitat, such as a decrease in potential foraging and cover habitat for the giant garter snake, would be temporary (i.e., one year) and minimal. Therefore, Reclamation's Proposed Action Alternative (the consent to the sale and transfer of this water) would not result in either a direct adverse or cumulative adverse effect on any listed species in the study areas.

Waterfowl

The Contractor's proposed project would result in the fallowing of up to approximately 30,000 acres of rice fields. Rice fields in the project area serve as foraging habitat for many waterfowl species. However, implementation of the Contractor's proposed project would not interfere substantially with the foraging of native-resident or migratory waterfowl because other foraging habitat is abundant both locally and regionally. Because the Contractor's proposed project would not convert any agricultural lands to non-agricultural land uses, the only change would be a one-year increase in the time between planting of rice in the project farmlands and a minor reduction in the acreage of rice lands available to waterfowl for foraging in 2003. This reduction in foraging acreage is less-than-significant based upon the regional abundance of flooded foraging habitat. Therefore, a less-than-significant impact would result to potential wildlife corridors for waterfowl which include the project acreage. Therefore, Reclamation's Proposed Action Alternative (the consent to the sale and transfer of this water) would not cause either a direct adverse or cumulative adverse effect on waterfowl.

Fish

The Contractor's proposed project may increase flows during July through September in the Sacramento River resulting from the movement of transfer water. Because of the relatively large volume of summer flows in the Sacramento River, changes in flows resulting from the water acquisition would be small and effects on fish in the Sacramento River would be negligible. Therefore, there would be no adverse impact on

the movement of any native resident or migratory fish species from the Reclamation's Proposed Action Alternative (the consent to the sale and transfer of this water).

Wetlands

No non-drainage facility related wetlands are located within the boundaries of the project site and therefore, no impacts to wetlands would occur from the Contractor's proposed project. Any riparian areas along service or drainage canals within the project boundaries would not be adversely impacted by the proposed project activities as water levels would be maintained near levels which would otherwise occur.

c. Geology and Soils

No Action Alternative

No change from the existing, pre-project conditions.

Proposed Action Alternative

Based upon readily available soil map information, most of the project area is underlain by fine-textured, strongly structured soils, such as clay and silty clay. Such soils have a wind erodibility index of 86 (tons per acre per year) when in a dry, unvegetated condition (U.S Department of Agriculture 1993). Highly wind-erodible soils, such as fine sands and sands, have a wind erodibility index of 134-310. Therefore, the soils in the project area have a relatively low risk of wind erosion when left in a dry, unvegetated condition. No significant impacts are expected from the Contractor' proposed project.

The use of the soils for the Contractor' proposed project is short-term, and is in accordance with past farming practices.

d. Agricultural Resources/Land Use

No Action Alternative

Under the No Action Alternative, (the typical benchmark), a small percentage of lands within the Purveyors' service areas would be rotated and temporarily removed from farm production for improvements such as land leveling, weed abatement, etc. When land is rotated, in almost all occasions, some water is applied to check the leveling actions, and also to aid in weed eradication.

Proposed Action Alternative

Idled land for purposes of developing water for the Contractor's proposed project would be above the typical amount of land typically not under production due to regular farming operational requirements. Acreage within each Purveyor's service area may be

temporarily idled, or cropping patterns shifted to generate the quantity of water identified under the Contractor's proposed project. The Contractor's proposed project would idle up to 20% of each Purveyor's acreage above the typical benchmark described above under the no action alternative. The quantity of water made available would be determined based upon the agreed upon acreage and consumptive use schedule for the lands idled or subject to crop shifting. Rice production for the Sacramento Valley in 2003 would be maintained within the 12-year historical range of approximately 350,000 to 516,000 acres of rice planted for this area under the Contractor's proposed project Alternative. The land idling and cropping changes are considered ongoing routine agricultural activities, the magnitude and intensity of which changes from year to year in response to various factors. No land use changes would result from this action and, because of the short-term duration of this activity (2003), this action would not act as an incentive for land use changes.

e. Cultural Resources

No Action and Proposed Action Alternatives

Reclamation's No Action and Proposed Action Alternatives would not affect cultural resources because the Contractor's project does not change in land use or include construction of new facilities. Water uses and land uses would remain unchanged during the one-year of the Contractor's proposed project.

f. Indian Trust Assets

No Action and Proposed Action Alternatives

Reclamation's No Action and the Proposed Action Alternatives would not affect any Indian Trust Assets (ITA) within the study areas. The Colusa and the Cortina Rancherias are the only Indian lands close to the contractors' service area. These rancherias lay approximately 3 and 7 miles, respectively, from Glen-Colusa Irrigation District (GCID). GCID will not pump any ground water as a result of the proposed action in this EA and therefore, there will be no impacts from ground water pumping to these ITAs. Other actions identified in this EA, such as rice fallowing, will have no effect to the Cortina and the Colusa Rancherias.

g. Environmental Justice

No Action and Proposed Action Alternatives

No potential impacts from the No Action or the Contractor's Proposed Action Alternative would disproportionately affect minority and low-income populations. Land idling activities and the associated remuneration would allow continued agricultural production and its workforce. Dry conditions may reduce some agricultural work but by optimizing

the use of the limited water resources, only temporary minor shifts of the location of some work could occur.

h. Cumulative Impacts

No Action Alternative

The condition of all environmental resources under the No Action Alternative would be identical to the existing, pre-project conditions.

Proposed Action Alternative

Water transfers from the Sacramento Valley through the Delta for consumptive uses and environmental purposes have been occurring on a large scale for over a decade. The only demonstrable adverse impacts known to have occurred were some impacts to groundwater levels and individual well owners' water supplies during some early transfer activities using groundwater substitution to generate the water for transfers. Those effects have not occurred during more recent transfers because of aggressive monitoring by a number of parties to prevent such effects. The estimated 12,935 acre-feet of groundwater substitution included in the proposed action would not result in an adverse cumulative effect on groundwater levels in the project areas because it is assumed that all selling agencies will be in compliance with groundwater criteria specified in the Water Transfer Papers for Water Transfers (Department of Water Resources, March, 2002). This groundwater "buyers criteria" require all selling agencies to establish a local groundwater monitoring and mitigation program sufficient to address and avoid third-party groundwater impacts before DWR or USBR would authorization the water transfer. The buyer's criteria for groundwater consists of three components: A Well Adequacy Review, a Monitoring Program, and a Mitigation Program. The objective of the Well Adequacy Review is to assure that all extraction wells to be used for these water transfers are located and operated in such a manner to minimize the potential risk of deleting surface water sources and adversely impacting groundwater quality. Under the Monitoring Program requirement, selling agencies must demonstrate to the BOR review team that they have an established monitoring program that address the following:

- Provides assurances that the quantity of water pumped in lieu of surface deliveries is accounted for properly.
- Determines the surface water/groundwater interaction in the areas where groundwater is pumped for the transfer agreement, including both pumping-induced infiltration and interception of groundwater discharge, or identify a program that addresses this issue.
- Accurately assesses the effects of the transfer on the existing groundwater system.
- Determines the direct effects of the transfer on the existing groundwater system.
- Determines the direct effects of transfer pumping on the groundwater basin, including any residual effects until full recovery of pre-project water levels occurs.

- Assesses the occurrence of any third party impacts and, if they occur, their magnitude and significance.
- Coordinates the monitoring program, as appropriate, with other established programs in the area.

The Selling agency must demonstrate that it has a groundwater mitigation program that could adequately compensate/and or avoid all significant third-party impacts. The mitigation program must include the following elements: (1) a procedure for the seller to receive reports of purported third party impacts and to report that information to USBR; (2) a procedure for investigating any reported impacts; (3) development of mitigation options, in cooperation with the affected third parties, or legitimate impacts; (4) a financial strategy for funding appropriate mitigation measures; and (5) commitment to avoid the same impact during future transfers.

The Contractor's proposed project is one of several water transfer programs likely to occur in 2003. Cumulatively, the certain water purveyors located along the Feather River and Yuba County Water Agency have proposed to provide MWD with up to 205,000 acre-feet during the 2003 irrigation season. This amount includes the up to 110,000 af that would be provided from the Sacramento River settlement contractors under the Contractors' proposed project, and up to 95,000 af to be made available to MWD from non-federal interests on the Feather/Yuba watersheds as indicated in Table 3.1, below.

Table 3.1
Feather/Yuba Watershed Sellers

District	Action	Amount
Western Canal Water District	Crop Idling	20,000 af
Butte Water District	Crop Idling	10,000 af
Richvale Water District	Crop Idling	15,000 af
Yuba County water Agency	Storage Releases and Ground Water Substitution	50,000 af
Total		95,000 af

In addition, the EWA would likely purchase about 200,000 acre-feet, much of which may come from the Sacramento River watershed, and a portion of that amount may be the water proposed herein if MWD does not elect to exercise its option. The so-called Phase 8 settlement, also known as the Sacramento Valley Water Management Program is slated to transfer 50,000 acre-feet in 2003 as well, depending upon the availability of funding. DWR's Dry Year Program may also require about 100,000 acre-feet, some of which may come as a part of this project as previously discussed. In total then, it is possible that

about 555,000 acre-feet of water may be transferred from the Sacramento Valley in 2003. Other transfers may also occur. The quantities of such transfers are highly uncertain but are likely to total less than 100,000 acre-feet.

Table 3.2, below, summarizes the recent history of water transfers from the Sacramento Valley to other portions of California. Table 3.2 shows that the proposed transfers for 2003 that are reasonably foreseeable total 555,000 acre-feet. This represents about 3.77% of the average annual total water supply available in the Sacramento Valley from surface and groundwater resources for all uses and 6.8% of total average agricultural water use in the Sacramento Valley.[7] As such, and recognizing that no significant impacts have been noted for transfers within this order of magnitude, no significant impacts are expected within the Sacramento Valley as a result of the Contractor's proposed project. Delta impacts are likewise not expected to be significant as all of the water shown in Table 3.2 plus an additional 25,000 acre-feet in 2001 from a San Joaquin River transfer was pumped in the Delta within existing biological constraints and without incident. Thus, even if there were additional transfers beyond these levels, such transfers would probably need to be on the order of magnitude of several hundred thousand acre-feet in order even to pose the potential for adverse effects on the environment.

Table 3.2

Recent Water Transfers from the Sacramento Valley (in acre-feet)							
Program							Potential
	1991	1992	1993	1994	2001	2002	2003
DWR Drought Water Banks/							
Dry Year Programs	820,000	193,246	0	220,000	138,000	22,000	100,000
Environmental Water Acct.					80,000	145,000	200,000
Sacramento Valley Forbearance					160,000		
Others						5000	
Phase 8/Sac Valley							
Settlement Agreement							50,000
MWD Colorado River Contingency							205,000
Totals	820,000	193,246	0	220,000	378,000	172,000	555,000

6. CONSULTATION AND COORDINATION

Reclamation released a public notice of the availability of the draft environmental assessment on January 24, 2003, to interested parties. In addition copies of the draft

[7] DWR Bulletin 160-98

environmental assessment were sent to nine entities that Reclamation believed had direct interest in this action. The draft environmental assessment was sent to those who requested it. Seven comment correspondences were received and are in the appendix of this environmental assessment. A public review and comment period for the proposed GCID Negative Declaration/Initial Study (attached) pursuant to the California Environmental Quality Act was completed on January 6, 2003. Water Purveyors' Draft Initial Studies (attached) were submitted to the State Water Resources Control Board as part of the petitions for the temporary transfer of water.

During preparation of this document, the following agencies were coordinated with and/or assisted in preparing the document:

Bureau of Reclamation
U.S. Fish and Wildlife Service (FWS)
National Marine Fisheries Service (NMFS)
California Department of Water Resources
California Department of Fish and Game
Metropolitan Water District of Southern California
Water districts/purveyors proposing the action

Consultation

Reclamation has consulted with the FWS and National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) pursuant to the Endangered Species Act (ESA) for this action. ESA consultation with the FWS was completed for the GCID portion of the proposed action on February 6, 2003 (see appendix) with concurrence of Reclamation's finding that the proposed action is not likely to adversely affect the threatened Delta smelt, threatened Sacramento splittail, and threatened giant garter snake. ESA compliance with the FWS for the Water Purveyors portion of the proposed action is ongoing and must be completed before those actions are approved.

NOAA Fisheries concurred with Reclamation's finding on January 6, 2003 (see appendix) that the proposed action will not adversely affect the federally listed endangered Sacramento River winter-run Chinook salmon, threatened Central Valley spring-run Chinook salmon, or threatened Central Valley steelhead, or their critical habitat.